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09/874,587	06/04/2001	Lowell Winger	CISCP249/4147	5663

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EXAMINER	
LEE, RICHARD J	

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/874,587	WINGER, LOWELL	
	Examiner	Art Unit	
	Richard Lee	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *9/1/06*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6-13,19 and 22-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6-13,19 and 22-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. The request filed on September 1, 2006 for a Request for Continued Examination (RCE) is acceptable and a RCE has been established. An action on the RCE follows.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 3, 4, 6-13, 19, and 22-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Specification does not provide support for the particular features of "selecting a most frequent EOB length associated with the video shot" and "selecting an iDCT algorithm for the video shot from a plurality of iDCT algorithms according to the selected most frequent EOB length" as claimed in claim 1; "selection means for selecting a most frequent EOB length associated with the video shot" and "selection means for selecting an iDCT algorithm for the video shot from a plurality of iDCT algorithms based upon the said selected most frequent EOB length" as claimed in claim 4; "selecting a most frequent EOB length associated with the video shot" and "selecting an iDCT algorithm from a plurality of iDCT algorithms according to the selected most frequent EOB length as claimed in claim 6; "selecting a most frequent EOB length associated with the video shot" as claimed in claim 11; "generating a histogram of EOB lengths for the examined DCT blocks representing a relative frequency of occurrence of EOB lengths for the shot, wherein the most frequent EOB length corresponds to the EOB length having the

highest frequency of occurrence" as claimed in claim 23; and "means for generating a histogram of EOB lengths for the examined DCT blocks representing a relative frequency of occurrence of EOB lengths for the shot, wherein the most frequent EOB length corresponds to the EOB length having the highest frequency of occurrence" as claimed in claim 26.

4. Claims 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For examples:

(1) claim 9, line 1, "medium" should be changed to "system" in order to provide proper antecedent basis for the same as specified at claim 4, line 1; and

(2) claim 10, line 1, "medium" should be changed to "system" in order to provide proper antecedent basis for the same as specified at claim 4, line 1.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 3, 4, 6, 7, 9, 11-13, 19, and 22-28 rejected under Murata et al of record (Fast 2D IDCT Implementation with Multimedia instructions for a Software MPEG2 Decoder) in view of Singh et al of record (US 2002/0027954 A1) and Jun et al of record (US 2001/60021268 A1).

Murata et al discloses an MPEG2 decoder system as shown in Figure 5, and substantially the same method for selecting inverse discrete cosine transform algorithms, system for reducing iDCT execution time, and computer program encoded on a computer readable medium

containing instructions for selecting and executing inverse discrete cosine algorithms as claimed in claims 1, 3, 4, 6, 7, 9, 11-13, 19, and 22-28, comprising substantially the same memory for storing a plurality of iDCT algorithms (see section 2.2, section 3.1, Figure 5); a computer processor for examining the coefficients of a plurality of DCT blocks corresponding to selected frames to determine an End of Block (EOB) length for each of the examined DCT blocks (i.e., EOB code value/EOB address, see section 2.2, section 2.3); generating an iDCT algorithm selection signal that identifies the iDCT algorithm to be executed by the processor (see section 2.2, section 2.3, section 3.1, Figure 5); a switch connected to the processor and the memory that receives the selection signal from the processor and, in response, selects the identified iDCT algorithm for execution by the processor (see switches of Figure 5, section 2.2, section 2.3, section 3.1, section 3.2); wherein the switch accepts as input a block of DCt coefficients, an EOB address, and a picture type bit rate (see Figure 5); wherein the plurality of iDCT algorithms comprises an iDCT Normal algorithm (i.e. iDCT (normal) of Figure 5, see section 2.2, section 2.3, section 3.1), an iDCT AC algorithm (i.e. iDCT_AC of Figure 5, see section 2.2, section 2.3, section 3.1), an iDCT high algorithm (i.e., the iDCT normal algorithm of Figure 5 is considered an iDCT high algorithm since the iDCT normal will be selected if EOB is greater than 10, see Figures 4 and 5, section 2.3, section 3.1), an iDCT low algorithm (i.e., the iDCT_4x4 algorithm of Figure 5 is considered na iDCT low algorithm since the iDCT 4x4 will be selected if the EOB is less than 10, see Figure 4 and 5, section 2.3, section 3.1), and an iDCT DC algorithm (i.e., iDCT_DC of Figure 5, see section 2.3, section 3.1); wherein the iDCT_high algorithm is based upon an EOB length of 39 or 50 (i.e., the iDCT normal algorithm is considered an iDCT high algorithm, since the iDCT normal algorithm is selected if the EOB is greater than 10, and

therefore an EOB of 39 or 50 is included in such iDCT high algorithm selection, see Figure 5, section 2.3, section 3.1); andwherein the selected frames are B frames (see section 2.3, section 3.2).

Murata et al does not particularly disclose, though, the followings:

(a) the computer processor for examining the coefficients of a plurality of DCT blocks corresponding to selected frames within a video shot, wherein a video shot is a sequence of frames bounded on each side by a video transition, wherein the video transition from the group comprising a cut frame, a dissolve, or a cross-dissolve, repeating steps a-d of claim 1 for a next video shot until a current video shot is a last video shot, and the system selects an iDCT algorithm and executes the selected iDCT algorithm for each of the video shots in a video as claimed in claims 1, 4, 6, 11, 19, 25, and 28; and

(b) selecting a most frequent EOB length associated with the video shot, and selecting an iDCT algorithm for the video shot from a plurality of iDCT algorithms according to the selected most frequent EOB length, generating a histogram of EOB lengths for the examined DCT blocks representing a relative frequency of occurrence of EOB lengths for the shot, wherein the most frequent EOB length corresponds to EOB length having the highest frequency of occurrence as claimed in claims 1, 4, 6, 11, 23, 26.

Regarding (a) and (b), Jun et al discloses a hierarchical hybrid shot change detection method for MPEG compressed video as shown in Figures 2 and 6, and teaches the conventional video transitions involving shots that include the editing effects such as fades and dissolves within MPEG video data which includes B-frames of video and DCT block processings, and wherein the video shot is a sequence of frames bounded on each side by a video transition (see

sections [0010], [0012], [0015], [0041], [0047], [0048], [0050]). Also, Singh et al discloses a method and device for gathering block statistics during inverse quantization and iscan as shown in Figures 1-3, and teaches the conventional use of histograms for the determination and selection of the most optimal IDCT algorithm of MPEG blocks of decoded data, which includes B-frames (see sections [0007], [0008], [0011]). Specifically, the least populated histogram pertaining to the row or column of non-zero coefficients as calculated within Singh et al is used for the selection of the optimal IDCT algorithm. It is hence considered obvious to provide the video shots of Jun et al within the system of Singh et al and Murata et al to thereby provide the examining of the coefficients of a plurality of DCT blocks corresponding to selected frames within a video shot, repeating steps a-d of claim 1 for a next video shot until a current video shot is a last video shot, and for selecting an iDCT algorithm and executing the selected iDCT algorithm for each of the video shots in a video as claimed. Further, since Singh et al teaches the use of histograms for determining the particular population of nonzero coefficients in the rows or columns of a DCT coefficient block, such similar use of histogram may be used for selecting the most frequent EOB length within Murata et al that is associated with the video shot provided by Jun et al and thereby selecting an iDCT algorithm for the video shot (i.e., as provided by Jun et al) from a plurality of iDCT algorithms according to the selected most frequent EOB length, generating a histogram of EOB lengths for the examined DCT blocks representing a relative frequency of occurrence of EOB lengths for the shot, wherein the most frequent EOB length corresponds to EOB length having the highest frequency of occurrence as claimed. Therefore, it would have been obvious to one of ordinary skill in the art, having the Murata et al, Jun et al, and Singh et al references in front of him/her and the general knowledge of the processing of iDCT

algorithms within video decoders, would have had no difficulty in providing the examining of a plurality of DCT blocks corresponding to selected frames within a video shot, repeating of steps a-d of claim 1 for a next video shot until a current video shot is a last video shot, selection of an iDCT algorithm and executing the selected iDCT algorithm for each video shots in a video, selecting a most frequent EOB length associated with the video shot, selecting an iDCT algorithm for the video shot from a plurality of iDCT algorithms according to the selected most frequent EOB length, generating a histogram of EOB lengths for the examined DCT blocks representing a relative frequency of occurrence of EOB lengths for the shot, wherein the most frequent EOB length corresponds to EOB length having the highest frequency of occurrence as taught in the combination of Jun et al and Singh et al all as part of the computer processor within Murata et al for the same well known selection of the most optimal iDCT algorithm within a video decoder purposes as claimed.

7. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murata et al, Jun et al, and Singh et al as applied to claims 1, 3, 4, 6, 7, 9, 11-13, 19, and 22-28 in the above paragraph (6), and further in view of Youn et al of record (6,650,707).

Murata et al, Jun et al, and Singh et al discloses substantially the same method for selecting inverse discrete cosine transform algorithms, system for reducing iDCT execution time, and computer program encoded on a computer readable medium containing instructions for selecting and executing inverse discrete cosine algorithms as above, but does not particularly disclose though wherein the iDCT low algorithm is based upon an EOB length of 14 or 25 as claimed in claims 8 and 10. Youn et al, however discloses in Figure 5 five different IDCT algorithms with specific criteria in determining and selecting one of the five IDCT algorithms.

Block 520 of Figure 5 of Youn et al teaches selecting an IDCT algorithm based on EOB > 10. In view of the plural breakdown of iDCT algorithms as shown in Figure 5 of Youn et al, it is hence considered obvious to modify the iDCT algorithm when EOB > 10 to include any desired amount of separate iDCT algorithms, such as the iDCT low algorithms as claimed. Therefore, it would have been obvious to one of ordinary skill in the art, having the Murata et al, Jun et al, Singh et al, and Youn et al references in front of him/her and the general knowledge of the selection of iDCT algorithms based on the EOB coefficients, would have had no difficulty in providing the iDCT low algorithm being based upon an EOB length of 14 or 25 within the normal iDCT processing of Murata et al in view of the plural breakdown of iDCT algorithms within Youn et al for the same well known iDCT computational efficiency based upon the use of multiple breakdown of EOB lengths purposes as claimed.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (571) 272-7333. The Examiner can normally be reached on Monday to Friday from 8:00 a.m. to 5:30 p.m, with alternate Fridays off.

RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

10/27/06